

A Model System

What if it rained heavily for 15 days straight? What if it didn't rain much at all for 15 months straight? Where would the water flow and what should the South Florida Water Management District do to optimize its urban, agricultural and environmental water supply and flood control responsibilities?

A comprehensive new computer tool will provide the answers. Using 35 years of climate records for southern Florida, plus technical details on the District's regional canals, water control structures, local topography and storage reservoirs, the Regional Simulation Model (RSM) simulates on a computer the complex hydrology of southern Florida. It will allow water managers to evaluate, plan and implement their operations under most any climactic and hydrologic conditions.

One of the model's strongest features is its regional simulation capability. Optimum operation of specific water control structures in a local watershed is essential for effective water management. Flexibility in simulating local scenarios within a regional model will be a valuable tool for enhancing resource management across all of South Florida.

"This Regional Simulation Model is the next generation in hydrologic computer modeling," said Dr. Jayantha Obeysekera, director of the Office of Modeling at the South Florida Water Management District. "The extremes of our climate make water management an ongoing challenge here. Fortunately, RSM is a powerful tool designed just for this purpose. It will serve the District well for decades to come."

Set-up of the model and data collection for RSM began in the spring of 2004. Initial testing, data refinement and calibration followed in early 2005. At present, final calibration, verification and peer review (independent scientific review) are taking place, and an RSM web site provides information and updates. The address is: www.sfwmd.gov then click on the "Data & Documents" Simulation Modeling scroll bar.

After the addition of water management capabilities into the model, RSM will be ready for use, replacing the current tool, called the 2x2 model, which has served its purpose for more than 20 years. As RSM is further perfected, it will be expanded to include data for modeling water quality issues. Eventually it will also include ecosystem modeling, an ambitious task given the biological complexities of the natural environment.

For now, modeling Florida's water will keep the District's modeling team busy enough. In fact, there has been interest outside the District for their work being done to develop RSM. In addition to modeling water, RSM may also become a role model to other agencies trying to wisely manage their water resources.



What is a computer model?

Computer modeling software has been around for decades, developing hand-in-hand with the computer itself. Computer models are widely used in the fields of physics, chemistry, biology, economics and engineering to simulate various kinds of complex systems and their operation. As more powerful computers have been developed, so too have more powerful computer models. Vast amounts of information can now be loaded into a program, and as various conditions are tested, representative scenarios are generated. The results guide everything from pharmaceutical studies to space exploration.



The young cast of new public service announcements that promote the prevention of urban stormwater pollution impacts to the Everglades take a break between takes.

EVERGLADES FOREVER: IT'S YOURS TO SAVE

New web site, public service announcements highlight how residents can protect the Everglades

Many southern Florida residents and visitors think the Everglades are fully contained in parks and natural areas completely isolated from the places they live and work. But the lakes, rivers and wetlands as well as the plants and wildlife that make living in Florida special are all a part of the greater Everglades ecosystem. Residents and visitors can have positive or negative impacts on the Everglades, even though they might not realize that direct connection exists.

The South Florida Water Management District's Everglades Stormwater Program along with corporate partner Comcast Cable have launched a series of five television public service announcements that will be seen in Broward County. MainSail Productions and staff from the Broward Service Center produced the PSAs that will complement a new comprehensive "Everglades Forever" web site. You can visit the new site (see below) and learn how your yard and urban landscaping can enhance your property without impacting the Everglades.

While the PSAs are showing on TBS, TNT, USA and the Weather Channel in Broward County, the messages will probably be seen in other areas of the District within the next year. They feature children promoting the use of lawn fertilizers with low phosphorus, saving the swales, and preventing the stormwater pollution that occurs with certain land uses. The PSAs will also be airing on various municipal government programming throughout Broward County.

To view the new PSAs and learn more about urban impacts to the Everglades, visit www.sfwmd.gov and click on the green and brown "Everglades Forever" icon.

Find Freddy!

Where in the District is Freddy?



CLUES:

- Freddy is at a popular tourist attraction that is located in the second-fastest growing city in the USA.
- While generally a freshwater guy, Freddy is learning how saltwater from the Gulf of Mexico mixes with fresh water to create an estuarine environment in a bay that runs parallel to the gulf.
- Freddy is partnering with city, state, and county governments, environmental groups, the private sector and the South Florida Water Management District on a huge watershed initiative to resolve issues related to this bay.

Give up? The answer is on the back page.